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MARKETING SPREADS FOR SOYBEAN AND COTTONSEED OILS USED IN SALAD DRESSING

U.S. DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE

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Washington, D. C. 20250 June 1968

SUMMARY

Salad dressings are an important market outlet for cottonseed and soybean oils. During 1966, about 12 percent of the domestic production of soybean oil, 10 percent of the cottonseed oil, and 2 percent of the corn oil was used in the production of all salad dressings. Soybean oil was the principal oil used in their manufacture, accounting for 80.1 percent of the total oil utilized. Cottonseed oil accounted for 19.0 percent, with corn and other oils including safflower making up 0.9 percent.

During a span of 25 years, soybean oil moved from the status of a minor oil to that of the major oil in the production of salad dressings. In the early 1940's, cottonseed oil was the major oil used but by the early 1950's the trend shifted and soybeans have been taking an increasing share of the dressing oils' market ever since. Important factors influencing this shift were (1) price--soybean oil has a price advantage over the other oils used; and (2) stability of soybean oil, which makes it desirable for food uses. This upward trend in the use of soybean oil is expected to continue during the next few years.

Cooked salad dressing, one of the largest selling kinds of dressings, is labeled with any of several brand names, but no other designation of type such as mayonnaise or french dressing. Consumption of this salad dressing in 1966 was 2.8 pints per person, equivalent to a fat content of roughly 1 pound of crude vegetable oil per person. Consumption of this and all other dressings combined during 1966 was 7.4 pints per person, equivalent to a fat content of

about 2 pounds of crude oil per person. In 1940, consumption of all manufactured salad dressings was 2.6 pints per person; the strong increase during 1940-66 reflects changes in eating habits and increasing popularity of salads.

With the continued growth in population and the increased per capita consumption of salad dressings, the industry will continue to be an important market outlet for edible oils.

Salad dressing is marketed over a broad price range. Brands are an essential part of both product differentiation and sales promotion efforts in marketing salad dressing. During 1964, there were 3,779 different brands of dressing products marketed. With advertising placing strong emphasis on brands in consumer buying, brand marketing will continue to be of great importance to the salad dressing industry.

Striking price differences are associated with brands, types of retail outlets, and regional consuming areas. Retail prices for salad dressing usually averaged lower in retail food chains and large independent supermarkets than in small independent retail food stores. During 1966, prices at chain retail stores were as much as 7.5 cents lower than in small retail stores for major brands, and as much as 4.8 cents lower for minor brands.

Mill-retail spreads--the difference between the value of crude vegetable oil in a pint of salad dressing at the oilseed processing level, and the selling prices of salad dressing at the retail grocers'--were usually greater for independents than for chains; and they were greater for the major brands for both types of retail outlets than they were for the minor brands.

On the average, for all types of salad dressings sold in all types of retail outlets in 1966, the manufacturers' price spread (the difference between the average value of crude oil in a pint of salad dressing and the average price received by manufacturers) was 12.7 cents for a pint jar. The retail price spread (difference between manufacturers' price and retail price) was 24.6 cents. The retail spread increased during 1956-66 but the manufacturers' spread decreased slightly.

The estimated total value of all crude vegetable oil used in all dressing products in 1966 represented roughly one-fourth of the total value received by manufacturers for the finished products. The other three-fourths represented other ingredients, labor, and services used in the production and marketing of dressing products. The value of crude oils used has shown little variability since 1946, but the total cost of other ingredients, labor, and services has trended upward. These increasing cost trends will probably continue with a greater share of the manufacturer's cost going for noningredient costs and a smaller share for the ingredients used.

MARKETING SPREADS FOR SOYBEAN AND COTTONSEED OILS USED IN SALAD DRESSING

By Thomas B. Smith, Agricultural Economist
Marketing Economics Division
Economic Research Service

INTRODUCTION

Salad dressings as a group have become an important part of the daily diets of consumers in the United States. Per capita consumption increased from 2.6 pints per person in 1940 to 7.4 pints in 1966. During this period there were changes in product formulation and in the number of brands available. For example, consumers paid twice as much for a pint of cooked salad dressing 1/ in 1966 as in 1940; the average retail price was 41.2 cents in 1966 compared with 20.7 cents in 1940.

Salad dressings are required by the Food and Drug Administration to contain at least 30 percent fat. Soybeans and cottonseed are the sources of about 99 percent of the oils used in salad dressing products. Oil from corn germs, safflower, olives, peanuts, sesame, sunflower, rapeseed, and other oilseeds accounted for the remainder. In 1966, production of salad dressings required about 679.7 million pounds of soybean oil, 157.8 million pounds of cottonseed oil, and 7.9 million pounds of other oils. In recent years soybean oil has been rapidly displacing cottonseed, corn, and other oils.

Soybeans and cottonseed are leading cash crops for many U.S. farmers. During 1966, farmers received approximately $2 billion for soybeans and about $300 million for cottonseed. During 1966, approximately $83 million worth of soybean oil was used in the production of salad dressings, $22 million worth of cottonseed oil, and $14 million worth of other oils.

The major shift in the utilization of various types of fats and oils in recent years created considerable marketing problems for agencies assembling, processing, and distributing these products. The objectives of this study are to determine marketing margins covering payments for services provided by marketing agencies in transforming soybean, cottonseed, and other vegetable

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1/ Most of the data in this report pertain to cooked salad dressing, which is prepared from edible vegetable oils, certain acidifying ingredients, eggyolk, and a cooked or partly cooked starch paste prepared with food starch, tapioca flour, wheat flour, rye flour, or several of these, and seasonings. It is labeled "Salad Dressing," with any of several brand names but no other designation of type of dressing. Other types include mayonnaise, sandwich spread, refrigerated dressing, french dressing, oil and vinegar dressing, cheese dressing, low-calorie and dietetic dressing, etc.

oils into salad dressing, and distributing salad dressing to consumers; to ascertain margins associated with major and minor brands of salad dressing, and retail outlets by six different area locations; and to evaluate farm-to-retail price spreads for salad dressings.

This study of price spreads for salad dressing is one of several similar studies of important food products undertaken by the Economic Research Service. Congress has specified that certain marketing research funds be utilized for studies of marketing spreads, reflecting the widely held interest in farm-to-retail spreads. 2/

Cooked salad dressing was the first of the basic dressings produced, and it has had a high degree of consumer acceptance for over 30 years. In its role of pioneer in dressings and as the principal dressing produced, it has served as the standard bearer or benchmark for dressing products in many production and price trend analyses. The Bureau of Labor Statistics maintained a long-term retail price series for the 1-pint retail unit of salad dressing in its monthly study of retail food prices. In July 1964, this series was discontinued but in selecting a dressing and a container size for use in this study, salad dressing in the 1-pint retail unit provided the best available information.

CHANGES IN THE SALAD DRESSING INDUSTRY

Most of the total volume of salad dressing, mayonnaise, and related products was produced by the dressing industries' 22 largest firms during 1966. Trends show an increasing number of large firms and a decreasing number of small firms in the industry. As a result of this a few large firms have been processing a greater and greater volume of production. During 1966, firms producing dressing products valued annually at $2 million and over processed 80 percent of the total production, compared with about 68 percent in 1946. There were 22 firms in this group during 1966 compared with 11 in 1946. Correspondingly, firms whose annual production was valued at less than $500,000 accounted for roughly 4 percent of the total production in 1966 compared with 15 percent in 1946 (appendix table 9). The trend toward the larger firms producing an increasingly greater share of the total production is expected to continue.

Types of Salad Dressings and Oil Requirements

Currently the most popular types of dressings, based on volume produced, are mayonnaise, salad dressing, and french, listed in order of importance. In 1966, manufacturers produced 75.1 million gallons of mayonnaise, 68.5

2/ The author wishes to extend special thanks to Harry O. Doty, Jr., A. D. Jones, W. A. Faught, George W. Kromer, and Forrest E. Scott, ERS, for their assistance in overall planning of this report.

million gallons of salad dressing, and 10.3 million gallons of french dressing. In terms of proportions of the total production of dressings, during 1966, mayonnaise accounted for 41.2 percent, salad dressing 37.6 percent, and french dressing 5.6 percent. The other related dressing products accounted for the remaining 15.6 percent (figs. 1 and 2).

The Federal Food, Drug and Cosmetic Act, administered by the Food and Drug Administration, sets standards that manufacturers of salad dressing must meet to market their products for use as food. The Act requires that salad dressing contain not less than 30 percent (by weight) of vegetable oils, mayonnaise 65 percent, and french dressing 35 percent. Other dressing products have similar standards. Although these standards set the minimum oil requirements, manufacturers may increase the oil content as they choose. However, since oil is a relatively expensive ingredient it is unlikely that manufacturers generally exceed the oil content required, although some formulas do have a higher oil content. Also, special customers sometimes require a higher oil content in the dressing products they purchase. The Armed Services require that salad dressing produced for military use contain a minimum oil content of 40 percent by weight, mayonnaise 80 percent, and french dressing 35 percent.

Trends

Production and Value

The salad dressing, mayonnaise, and related products industry has expanded rapidly in the past four decades. Production of dressing products in 1966 was over eight times greater than in 1930. In 1930, 21.2 million gallons were produced compared with 182.4 million gallons in 1966. The production trend has been consistently upward during this 36-year period (fig. 3).

For many years, cooked salad dressing was the most popular dressing produced (based on the quantity produced). However, in 1960 mayonnaise took a greater proportion of the dressing market for the first time and has held it ever since. Even though the increase in mayonnaise production over salad dressing was small, it is an indication of the changing eating habits of consumers. From 1934 through 1946, salad dressing accounted for more than 50 percent of all dressings produced, except in 1942 when it represented 48 percent of the total. Since 1946, salad dressing has accounted for at least 40 percent of all dressings produced.

During 1966, the value of dressings at the manufacturer's level was $335.0 million compared with a 1937 value of $49.9 million. This represents over a sixfold increase in value of salad dressing products during this period. During the same period volume increased more than fivefold.

Consumption

Per capita consumption of all dressings rose from 1.4 pints per person in 1930 to 7.4 pints per person in 1966 (fig. 4). Increases were larger for some products than for others. For example, consumption of salad dressing

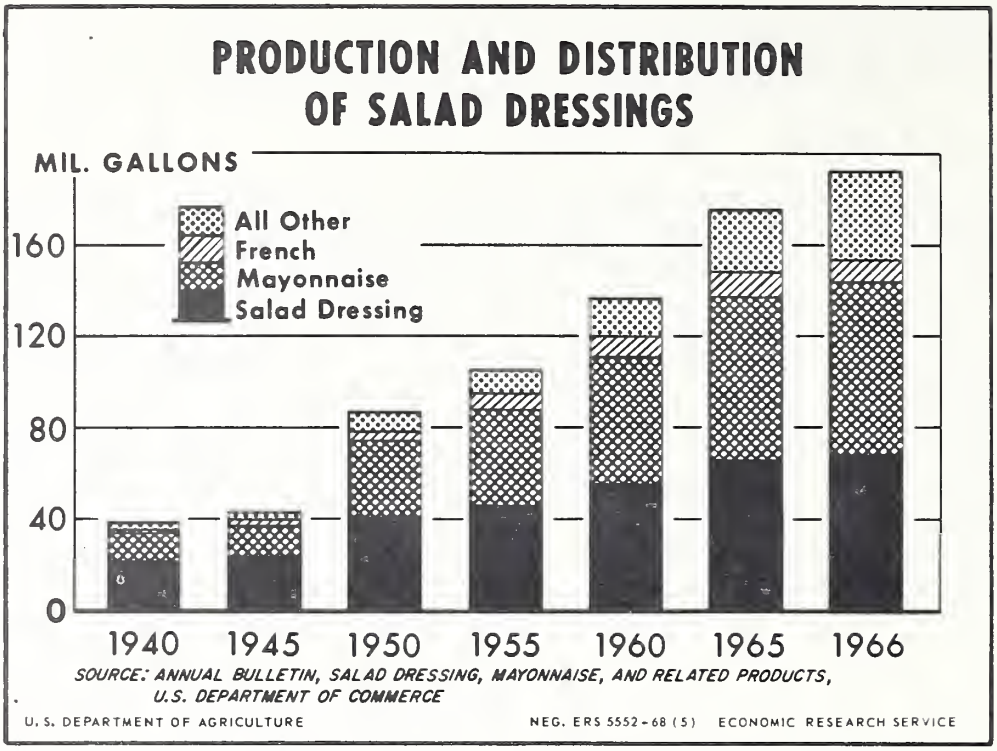
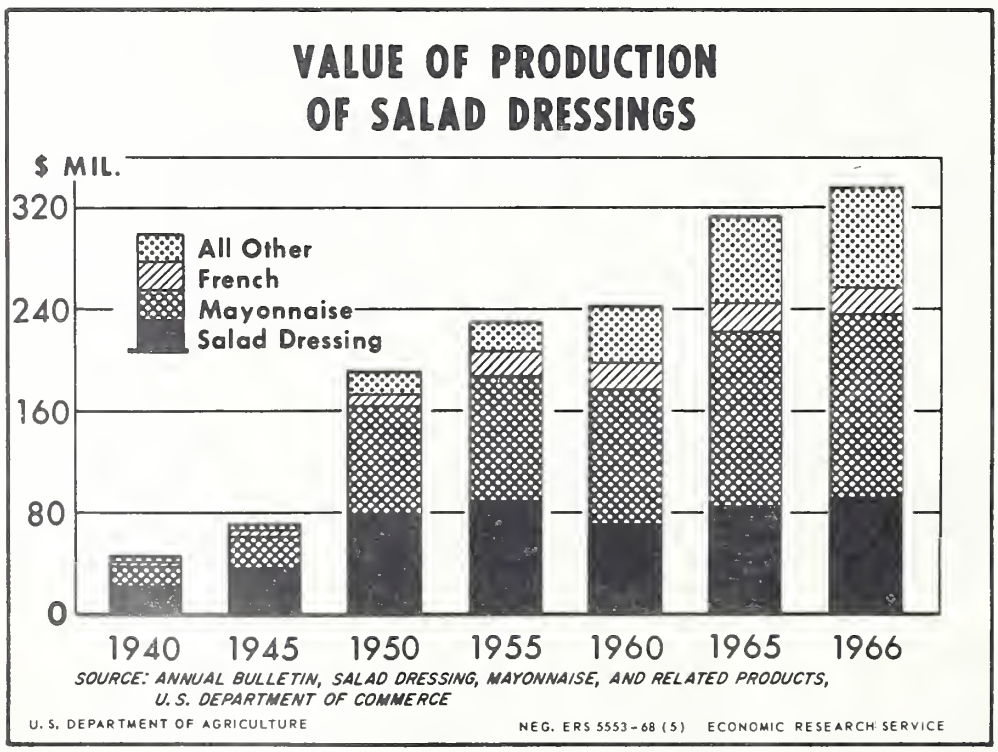


Figure 1



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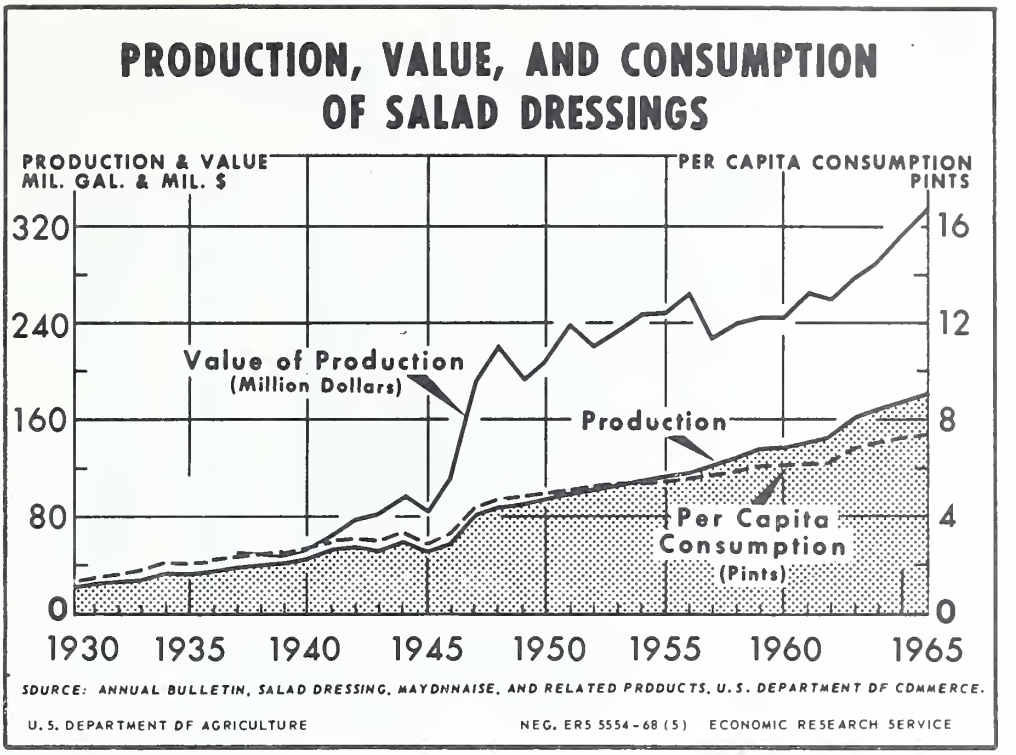

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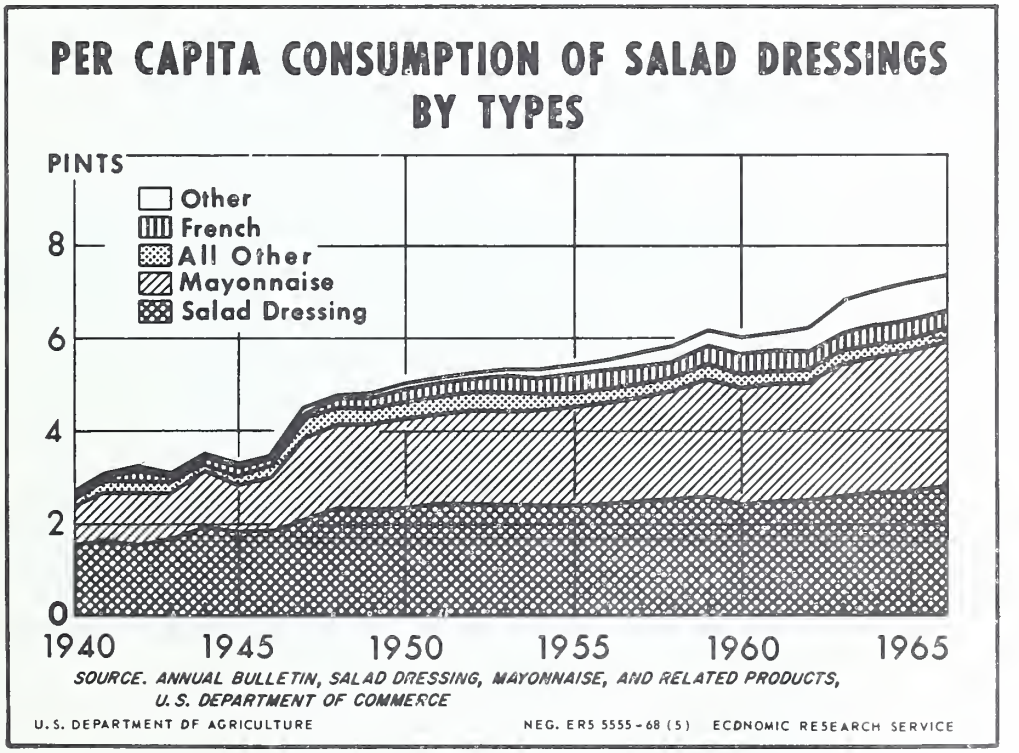

Figure 4

increased from 1.5 pints per person in 1940 to 2.8 pints per person in 1966, whereas per capita consumption of mayonnaise increased from 0.8 pint to 3.1 pints per person. French dressing consumption per person increased from 0.1 to 0.4 pint per person during this period. Consumption of other dressings also increased, but the per capita change was not as sharp as it was for salad dressing, mayonnaise, and french dressing during this period (fig. 4). These increases in per capita consumption reflect the growing popularity of these products among consumers. Not only are salad dressing and mayonnaise still widely used on picnic tables and in lunch baskets but they have found an important place on the daily menu of the American housewife.

Oils Used

During 1943-66, the dressing industry took about 10 percent of the combined domestic production of soybean, cottonseed, and corn oils. Proportionally the oil components of dressing products were as follows: In 1943 soybean oil 14 percent, cottonseed oil 47 percent, and corn and other oils 39 percent. In 1950 soybean oil 43 percent, cottonseed oil 38 percent, and corn and other oils 20 percent; and in 1966, soybean oil 80 percent, cottonseed oil 19 percent and corn and other oils 1 percent (fig. 5). At the same time this shift in use of the various oils was taking place consumption of all oils in dressing products was tripling.

Size of Consumer Packages

Significant changes have occurred in the size of the consumer package of salad dressing products. During 1940-64, the 8-oz., 16-oz., and 32-oz. containers were the most popular sizes based on the number of units of each packed. Among these three sizes, consumers have consistently shown preference for the 8-oz. size (½ pint). However, the 32-oz. (quart) unit has gained increasing consumer preference since 1946 (data not available since 1964). The number of 32-oz. containers packed represented 1.4 percent of the total packed in 1946 and 29.2 percent in 1964. Use of the 16-oz. (pint) units has decreased in recent years. The 8-oz. containers consistently accounted for over one-third of the total number of all units packed during 1940-64 (fig. 6).

PRICE TRENDS

Unit Prices

Prices among the various salad dressing products varied considerably. The quantity and the price of oils used per unit of product are important factors influencing price variations among the dressing products. The unit price of the different salad dressing products usually increases as the oil content of the product increases. However, requirements for labor and other inputs vary among products and doubtless influence price variations among salad dressings. During 1966, the average price received by manufacturers per gallon of salad dressing was $1.33; the average price received for mayonnaise was $1.94, and for french dressing, $2.14. Prices of each major dressing product also varied over a wide range during 1940-66. For example, the average

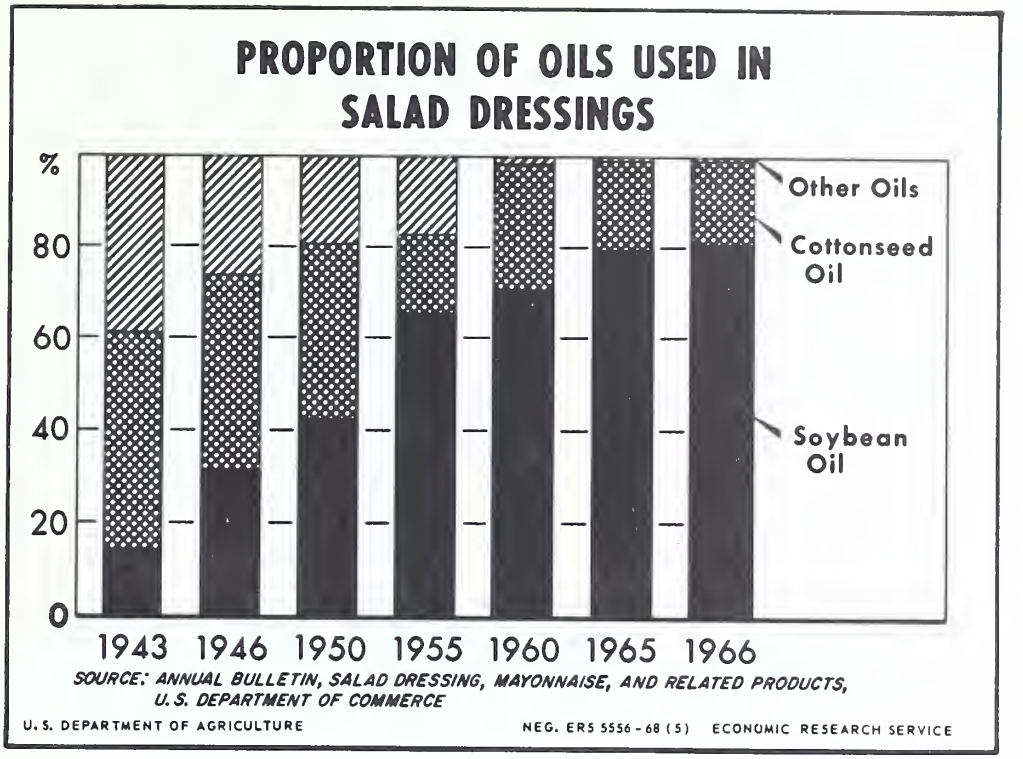

Figure 5

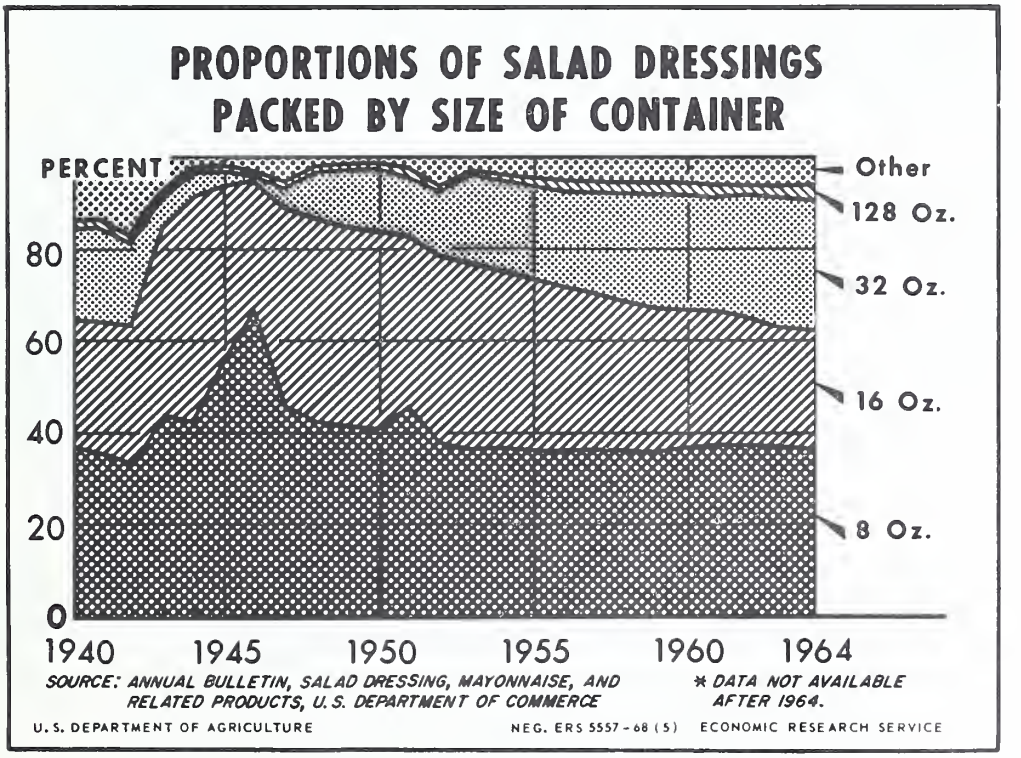

Figure 6

price received by manufacturers for salad dressing during this period varied from a low of $1.03 per gallon in 1940 to a high of $2.26 per gallon in 1948. Prices for other products show similar variations (figs. 7 and 8).

Price Differences

Advertising has been a successful method by which leading manufacturers of dressings have been able to differentiate their products. Brand names and advertising have been widely used in introducing salad dressing products to the public. During 1964 (data not available since 1964) there were 3,223 different brands of dressing products marketed. Leaders in the industry usually offer consumers a choice of high, low, and medium priced brands. Some of the chain stores have concentrated on developing private brands which are usually lower priced than the promoted brands. There is a generally accepted opinion that chainstores enjoy price advantages such as purchase discounts over many independent retail outlets in procuring salad dressings and that these advantages can be reflected in lower retail prices to the consumer.

Merchandising practices of the retail grocers influence the size of retail margins. Many retailers, especially chainstores, often feature coupon deals, and special prices on salad dressing to attract customers. This is most frequently done on weekend promotions. Sometimes special prices advertised by retail stores may originate with the manufacturer, in which case the retailers are compensated for the reduction in price.

The vast number of brands of dressings, types of retail outlets, different kinds of salad dressing products, geographic location outlets, 4/ and merchandising practices are important factors contributing to the multiplicity of prices and the wide price span existing for salad dressing products.

Some of the influence of merchandising practices, brands, types of retail outlets, and geographic location is reflected in the price data for salad dressing presented in table 1. These data indicate that the retail selling prices of salad dressing are considerably different for the chain (large) and the independent (medium and small) grocery stores 5/ and between the major (advertised) and minor (usually unadvertised) brands within a particular type of retail outlet. There are also price differences among the different cities within any type of retail outlet and brand group. Prices were generally higher in independent retail grocery stores for both major and minor brands of salad dressing than prices charged at retail chainstores.

4/ Quarterly price data were obtained through the Bureau of Labor Statistics by type of retail outlet, major and minor brands, and by geographic region. In this report 6 cities were selected to represent different marketing areas of the United States: Atlanta, Chicago, Houston, Los Angeles, Philadelphia and Seattle.

5/ In this report stores are generally classified as follows: "large" refers to chain retail grocery stores; "medium" to large independent retail grocery stores; and "small" to small independent grocery stores.

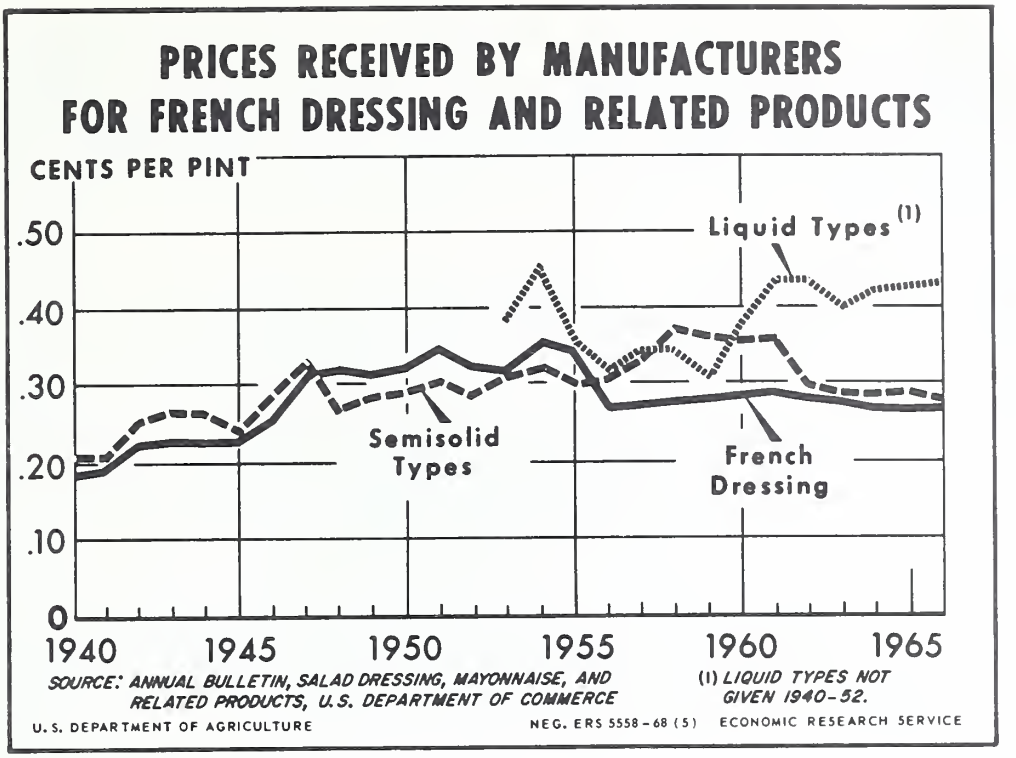

Figure 7

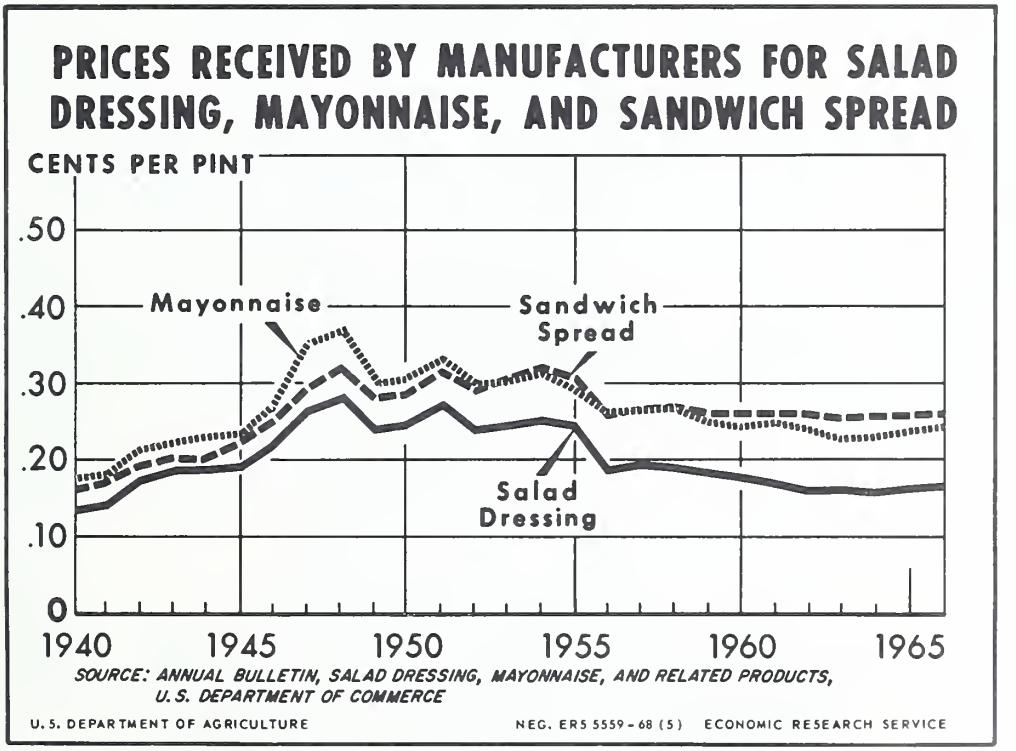

Figure 8

Table 1.--Salad dressing, major and minor brands: Quarterly retail prices per pint in large stores, and differentials from large stores, specified cities, 1966

Quarter and city	Major brands				Minor brands			
	Large 1/	Differential from large			Large 1/	Differential from large		
		Medium 2/	Small 3/	City average		Medium 2/	Small 3/	City average
	-Cents-							
1st quarter:								
Atlanta	43.1	+2.2	+1.9	+0.9	31.5	-0.8	-0.5	-0.2
Chicago	41.0	+1.3	+1.4	+0.6	31.5	-1.1	+1.5	+0.1
Houston	43.5	-0.5	-0.1	-0.2	35.2	+1.3	+2.6	+1.0
Los Angeles	37.1	+2.3	+7.4	+1.5	27.5	--	--	--
Philadelphia	39.0	+1.5	+3.2	+0.9	31.6	+1.0	+1.9	+0.5
Seattle	42.7	+2.3	+1.9	+1.2	34.8	+0.7	+0.2	+0.2
2nd quarter:								
Atlanta	42.4	+3.1	+0.9	+0.7	34.7	-2.5	-2.2	-1.0
Chicago	39.0	+3.3	+5.2	+1.8	31.7	-1.8	+0.3	-0.3
Houston	43.6	-0.7	-0.1	-0.3	36.3	+0.2	+2.2	+0.5
Los Angeles	36.3	+3.2	+7.5	+1.8	27.9	+1.1	--	--
Philadelphia	39.1	+1.8	+4.0	+1.2	32.4	-0.4	+0.9	+0.2
Seattle	44.5	+0.3	+0.5	+0.2	34.8	+0.4	+0.2	+0.2
3rd quarter:								
Atlanta	45.1	+0.8	-2.4	-0.5	36.0	-3.0	-5.0	-1.9
Chicago	40.4	+1.6	+3.2	+1.1	32.5	-2.7	+0.5	-0.5
Houston	43.5	-0.6	+0.5	-0.1	34.3	+2.3	+4.2	+1.7
Los Angeles	36.5	+2.8	+7.3	+1.6	28.5	--	--	--
Philadelphia	39.1	+1.5	+2.7	+0.8	33.0	-0.4	--	+0.2
Seattle	42.7	+2.4	+2.3	+1.3	34.8	+0.5	+1.0	+0.3
4th quarter:								
Atlanta	45.8	+1.5	-1.4	-0.1	37.9	-3.2	-6.9	-2.4
Chicago	37.0	+6.4	+6.7	+2.9	29.6	+0.9	+3.7	+1.0
Houston	46.3	-2.7	-2.0	-1.4	35.2	+0.5	+4.8	+1.1
Los Angeles	37.4	+2.9	+6.8	+1.6	4/	--	--	--
Philadelphia	41.1	+1.9	+2.8	+0.8	33.0	--	+0.3	+0.1
Seattle	44.3	+1.3	+1.3	+0.7	35.0	+0.7	--	+0.2

1/ Chainstores and large independent supermarkets through the 2nd quarter of 1964. Beginning with the 3rd quarter of 1964 "large" represents chainstores only. 2/ Independent grocery stores excluding large supermarkets through the 2nd quarter of 1964. Beginning with the 3rd quarter of 1964 "medium" represents large independent grocers only. 3/ Included with medium sized grocers through the 2nd quarter of 1964. Beginning with the 3rd quarter of 1964 "small" represents small grocery stores. 4/ Insufficient number of quotations.

Source: Bureau of Labor Statistics.

As an example, data for Chicago for the last quarter of 1966 showed that in large retail outlets the average selling price of a pint of major brand salad dressing was 6.4 cents lower than in medium-sized retail outlets, 6.7 cents lower than in small retail stores, and 2.9 cents lower than the city average. Minor brand prices of salad dressing in large retail stores in Chicago during the same period were 0.9 cent lower than prices in medium stores, 3.7 cents lower than in small retail stores, and 1.0 cent lower than the city average price.

There was a more striking difference between retail prices of salad dressing within each type of retail outlet. Retail prices for major brands sold in large stores in Atlanta during the last quarter of 1966 were 7.9 cents higher than prices for the minor brands in the large stores. Prices for major brands in the medium-sized stores were 12.6 cents higher than comparable prices of minor brands. In the small stores, prices of major brands were 13.4 cents higher than prices for minor brands. Advertising is one of the strong factors contributing to price differences between major and minor brands. Also there is some evidence that retail prices of salad dressing were trending upward during 1963-66 among both major and minor brands and in all types of grocery stores. Retail prices for major brands of salad dressing in large stores in Houston, Tex., during the last quarter of 1963 averaged 39.3 cents per pint, compared with 46.3 cents per pint in 1966. Similar price changes took place in other cities in other types of stores, and among both major and minor brands (appendix table 10).

Some brands of salad dressing are sold nationally but the retail prices are not the same in all locations due to differences in costs of production and marketing or other factors. During the last quarter of 1966, prices for major brands of salad dressing in large stores varied from a low of 37.0 cents per pint in Chicago to a high of 46.3 cents per pint in Houston, a difference of 9.3 cents. A similar price pattern for major brands existed between cities among the other sizes of stores (appendix table 10).

Modal prices for major and minor brands also varied widely among stores of the same type. During the last quarter of 1966 the modal price for major brands sold by large retail grocers in Atlanta was 45 cents per pint with prices ranging from 43 to 55 cents a pint; among the medium-sized grocery stores, the modal price was 47.0 cents with a price range from 43 to 55 cents; and among the small stores, the modal price was 47 cents with a price range of 37 to 47 cents. Similar price variations existed among major and minor brands in all types of stores at other locations.

Retail Prices, United States and Selected Cities, Averages 1940-66

For the United States as a whole the average retail price paid for a pint jar of salad dressing in 1966 was twice as high as it was 27 years earlier. On the average, the American consumer paid 20.7 cents for a pint jar of salad dressing in 1940. By 1966, the price had risen to 41.2 cents (table 2). In recent years, salad dressing prices for the 20 largest cities in the United States in all types of retail outlets varied from 2.8 cents less than the U.S. average price to 4.4 cents above.

Table 2.--Crude vegetable oils in a pint of salad dressing: Farm value, mill value, price spreads, and prices, 1947-66

Year	Value received by farmers crude oil basis 1/	Farm-mill price spread 2/	Mill cost of oil, crude basis 3/	Manufacturers' spread 4/	Manufacturers' selling price of salad dressing 5/ & 6/	Retail spread 7/	Retail selling price of salad dressing 8/
	Cents						
1947	4.3	3.7	8.0	18.0	26.0	12.5	38.5
1948	5.5	2.6	8.1	20.1	28.2	11.4	39.6
1949	3.7	.8	4.5	19.5	24.0	11.2	35.2
1950	2.9	1.3	4.2	20.4	24.6	10.1	34.7
1951	4.3	1.6	5.9	21.1	26.0	11.7	38.7
1952	3.1	.7	3.8	20.0	23.8	11.1	34.9
1953	3.5	.5	4.0	20.2	24.2	10.3	34.5
1954	3.5	.8	4.3	20.7	25.0	10.9	35.9
1955	3.4	.6	4.0	20.5	24.5	10.8	35.3
1956	3.0	1.0	4.0	14.5	18.5	16.8	35.3
1957	3.2	.9	4.1	15.0	19.1	18.1	37.2
1958	3.0	.7	3.7	15.2	18.9	18.9	37.8
1959	2.5	.8	3.3	14.7	18.0	19.6	37.6
1960	2.2	.6	2.8	14.7	17.5	18.5	36.0
1961	2.7	1.0	3.7	13.4	17.1	20.3	37.4
1962	2.7	.6	3.3	12.5	15.8	22.5	38.3
1963	2.4	.5	2.9	13.4	16.3	21.8	38.1
1964	2.4	.4	2.8	13.0	15.8	22.6	9/ 38.4
1965	3.0	.5	3.5	12.8	16.3	24.0	10/ 40.3
1966	2.8	1.1	3.9	12.7	16.6	24.6	10/ 41.2

1/ Estimated by deducting the country shippers' price spreads and the mill price spreads from the value of crude oils at the mill (appendix table 8).

2/ Estimated by deducting the farm value of crude oils in a pint of salad dressing from the mill cost of crude oils in a pint of salad dressing.

3/ From table 3. Estimated by applying the crude oils requirement ratios for a pint of salad dressing to the appropriate crude oil unit price of oils used in production.

4/ Estimated by deducting the mill cost of crude oils used in a pint of salad dressing from the manufacturers' selling price for a pint of salad dressing. For this report, among the ingredients used, only the estimated farm value of crude oil is deducted from the manufacturers' value of salad dressing to obtain the manufacturers' price spread. The spread as shown, therefore, contains the cost of all ingredients other than oil used in salad dressing, in addition to the manufacturers' operating costs and services. Other ingredients also have a substantial value.

5/ Average price received by manufacturers. Source: Mayonnaise, Salad Dressing and Related Products, annual bulletin, Department of Commerce. Price per pint estimated by dividing average price per gallon by 8.

6/ Data before 1956 are not comparable with data from 1956 through 1966 because of a change in reporting methods beginning with 1956. Prior to 1956 some of the larger companies reported value of shipments at a level comparable to a wholesale value, others reported value more comparable to the factory level. Since 1956 reporting has been standardized and value of shipments are now reported on a factory level basis, that is value f.o.b. factory.

7/ Estimated by deducting manufacturers' selling price for a pint of salad dressing from the retail selling price per pint.

8/ U.S. average retail prices in urban areas, BLS, retail food prices by cities and annual average.

9/ Average of monthly prices January through July, retail prices by cities and annual average, urban areas, BLS. BLS retail price series for salad dressing discontinued as of July 1964.

10/ Estimated.

During 1940-66 retail prices of salad dressing also varied from month to month in all 20 locations. However, the monthly variations were not as great as the variations between cities and years. Monthly prices for these cities varied from 0.4 cent below the U.S. average price to 0.4 cent above the yearly average.

PRICE SPREADS

Three price spreads were developed between the farm and the consumer for a pint of cooked salad dressing. As used in this report and shown in table 2, they are (1) the farm-mill spread, (2) the manufacturers' spread, and (3) the retail spread. For use in developing these price spreads the value of crude oils in a pint of salad dressing was estimated at the mill level and farm level (see appendix for methodology used in the development of these values).

The farm-mill spread--which represents the difference between the estimated value of crude oils used in a pint of salad dressing at the farm level and the equivalent value of these oils at the oil mill level--showed considerable variation between 1947 and 1966 with spreads varying from as low as 0.4 cent to as high as 3.7 cents. There was no indication that the farm-mill spreads tended to widen or to narrow; instead they fluctuated from year to year (table 2). This situation probably reflected the changing prices of crude oils during this period and the strong shift in the relative importance of the major oils used in the production of salad dressings. The wholesale price of crude soybean oil fluctuated, during 1947-66, from a low of 8.5 cents to a high of 23.7 cents per pound; crude cottonseed oil from 10.0 to 26.2 cents per pound; crude corn oil from 11.1 to 25.7 cents per pound (table 3). Also during this period the shift in the relative importance of the different oils used in salad dressings was striking; soybean oil shifted its position from the least important to the most important, cottonseed oil from the most important to second place, and corn and other oils dropped from second place to negligible importance.

The manufacturers' spread--representing the difference between the value at the oil mill of crude oils used in a pint of salad dressing, and the average price received by manufacturers for a pint of salad dressing--showed some variations during 1956-66, but with spreads tending to become smaller. This reflects in part the lower manufacturers' selling price for a pint of salad dressing during this period and the fluctuating mill value of crude oils used in a pint of salad dressing. The manufacturers' spread contains the cost of other ingredients and the cost of services in addition to the manufacturers' operating margin (table 2).

The retail spread, representing the difference between the price received by manufacturers for a pint of salad dressing and the retail price of salad dressing, showed some variation between years. However, during the 1956-66 period the spread increased in 9 of the 11 years and rose almost 50 percent. The spread widened because of a drop in the manufacturers' selling prices and a rise in retail prices (table 2).

Retail prices for salad dressing include returns to marketing agencies for services, materials, and ingredients other than oil. In 1966 the sum of these

Table 3.--Crude vegetable oils in a pint of salad dressing: Prices, proportions of specified oils used, and mill values, 1946-66

Year	Soybean oil			Cottonseed oil			Corn and other oils			Soybean, cottonseed, corn and other	
	Price of crude oil 1/	Crude oil per pint of salad dressing	Mill value of crude oil per pint of salad dressing	Price of crude oil 2/	Crude oil per pint of salad dressing	Mill value of crude oil per pint of salad dressing	Price of crude oil 3/	Crude oil per pint of salad dressing	Mill value of crude oil per pint of salad dressing	Crude oil per pint of salad dressing 4/	Average value of crude oil per pint of salad dressing 5/
	Cents	Percent	Cents	Cents	Percent	Cents	Cents	Percent	Cents	Percent	Cents
1946	11.9	10.1	1.2	12.8	13.8	1.8	15.6	8.6	1.3	32.5	4.3
1947	22.8	8.2	1.9	24.8	13.7	3.4	25.7	10.4	2.7	32.1	8.0
1948	23.7	8.8	2.1	26.2	14.6	3.8	25.7	8.7	2.2	32.1	8.1
1949	13.1	10.6	1.4	15.4	14.4	2.2	12.2	7.2	.9	32.1	4.5
1950	12.3	13.4	1.6	12.5	12.5	1.6	16.0	6.3	1.0	32.3	4.2
1951	17.8	18.2	3.2	20.4	7.6	1.6	19.0	6.0	1.1	31.9	5.9
1952	11.3	20.8	2.4	13.0	7.7	1.0	13.3	3.3	.4	31.7	3.8
1953	12.1	20.8	3.5	14.2	7.1	1.0	14.1	3.7	.5	31.6	4.0
1954	13.5	18.7	2.5	13.6	10.1	1.4	14.0	2.7	.4	31.5	4.3
1955	11.9	20.6	2.5	13.4	8.6	1.2	13.0	2.4	.3	31.5	4.0
1956	12.5	20.0	2.5	13.0	9.8	1.3	14.1	1.7	.2	31.5	4.0
1957	12.7	20.5	2.6	13.4	9.5	1.3	13.8	1.5	.2	31.6	4.1
1958	10.8	21.5	2.3	13.6	8.8	1.2	13.3	1.3	.2	31.6	3.7
1959	9.5	21.7	2.1	12.7	8.9	1.1	11.8	.9	.1	31.5	3.3
1960	8.3	21.9	1.8	10.0	9.2	.9	13.1	.4	.1	31.5	2.8
1961	11.3	21.9	2.5	11.8	9.1	1.1	18.3	.5	.1	31.5	3.7
1962	9.5	22.7	2.2	12.5	8.1	1.0	14.6	.5	.1	31.3	3.3
1963	8.9	23.6	2.1	10.5	7.1	.7	12.1	.6	.1	31.3	2.9
1964	8.5	24.2	2.1	10.0	6.6	.7	11.1	.4	.3	31.1	2.8
1965	11.3	24.8	2.8	11.6	6.4	.7	14.0	.3	.4	31.5	3.5
1966	11.8	25.2	3.0	13.0	6.0	.8	16.1	.3	.5	31.5	3.9

1/ Average wholesale price per pound, tanks, f.o.b. Midwestern mills.
2/ Average wholesale prices per pound, tanks, f.o.b. S.E. mills.
3/ Average wholesale prices per pound, tanks, f.o.b. mills.
4/ Estimated percentage crude oils per pint of salad dressing. The 30 percent oils requirement of FDA was adjusted to crude oil basis by application of crude refined oil ratio for the oils used, to the proportion of the different oils used in dressings (appendix table 5).
5/ Oil processing mill level.

charges plus the cost of oil, or the retail price of a pint jar of salad dressing, averaged 41.2 cents (table 2). The estimated value of crude oil in a pint of salad dressing has represented roughly 8 to 10 percent of the retail value of a pint of cooked salad dressing in recent years. During 1966, the value of crude oil averaged 3.9 cents and the manufacturers' price spread was 12.7 cents to cover other ingredients, costs, and services, giving a manufacturers' selling price of salad dressing that averaged 16.6 cents for a pint jar. There also was a retail price spread of 24.6 cents in 1966 to cover other costs incurred between the manufacturer and the consumer (table 2).

Oil mill-retail price spreads given in appendix table 11 are based on retail prices for a pint of salad dressing by major and minor brands and by types of retail outlet for specified city locations for 1966. The differences in the size of the spreads between major and minor brands and type of retail outlets are noteworthy. Price spreads for major brands were as much as one-third greater than spreads for the minor brands. During the first quarter of 1966, the mill-retail spread based on prices for large stores in Atlanta was 39.2 cents for a major brand pint jar of salad dressing; it was 27.6 cents for minor brands in the same classification. A similar relationship existed between spreads for major and minor brands estimated on the basis of prices found in medium and small stores in Atlanta and other cities and in other quarters during the year (appendix table 11).

To the extent that more expensive and less expensive oils were used in higher and lower priced brands, respectively, the use of common oil values resulted in overestimation and underestimation of the margins. Price spreads between major and minor brands varied considerably between types of retail outlets for the specified cities (appendix table 11).

Manufacturers' Bill

The estimated value of crude oil used in the production of all salad dressing, mayonnaise, and related products in 1964 represented roughly one-fourth of the manufacturers' value. In 1966, the value of oil increased to 31.9 percent (table 4). The remainder, (roughly 68 percent in 1966) represented the value added by manufacturers and also cost of ingredients and other costs not ordinarily considered a part of value added by the manufacturer. As an example, in 1966 the estimated value of oils used in dressing products was $106.7 million which represented 31.9 percent of the value received for these products by the manufacturers in that year. Total wholesale value of mayonnaise, salad dressing, and related products in 1966 was $335.0 million. During 1947-66, crude oil values of dressing products varied widely from 24 to 47 percent of the total. However, during the past 17 years they have varied considerably less, between 23 and 33 percent.

The manufacturers' selling price, as used, represents the average value received by manufacturers f.o.b. plant. Basic data used in estimating these values were taken from the bulletin, Mayonnaise, Salad Dressing and Related Products, published annually by the Department of Commerce.

Table 4.--Salad dressing, mayonnaise, and related products: Wholesale value of dressing, and value of crude oils and other ingredients and services used in production, 1946-66

Year	Wholesale value of dressing products 1/	Crude oils		Other ingredients and services	
		Value 2/	Percentage of wholesale value	Value	Percentage of wholesale value
	Million dollars	Million dollars	Percent	Million dollars	Percent
1946	111.6	31.9	28.6	79.7	71.4
1947	191.3	90.4	47.3	100.9	52.7
1948	221.4	101.2	45.7	120.2	54.3
1949	193.1	56.7	29.4	136.4	70.6
1950	208.7	54.3	26.0	154.4	74.0
1951	237.2	78.3	33.0	158.9	67.0
1952	221.2	52.0	23.5	169.2	76.5
1953	231.0	57.3	24.8	173.7	75.2
1954	245.8	59.5	24.2	186.3	75.8
1955	247.2	61.9	25.0	185.3	75.0
1956	264.5	68.8	26.0	195.7	74.0
1957	228.8	73.4	32.1	155.4	67.9
1958	238.4	70.1	29.4	168.3	70.6
1959	244.0	69.2	28.4	174.8	71.6
1960	243.7	60.2	24.7	183.5	75.3
1961	262.7	81.3	30.9	181.4	69.1
1962	259.7	74.8	28.8	184.9	71.2
1963	279.8	72.4	25.9	207.4	74.1
1964	289.6	69.5	24.0	220.1	76.0
1965	312.7	95.4	30.5	217.3	69.5
1966	335.0	106.7	31.9	228.3	68.1

1/ U. S. Department of Commerce, Salad Dressing, Mayonnaise and Related Products, annual bulletin.
2/ Estimated.

APPENDIX

Methodology

The following methodology was used in determining price spreads at various levels for cooked salad dressing. The first step was to estimate the value of crude oils used in cooked salad dressing at the oil mill level. The proportions of refined soybean, cottonseed, and other vegetable oils used in salad dressings were ascertained, and were adjusted to comparable crude oil ratios and distributed among the different oils used, through application of crude-refined oil ratios to them (appendix table 5). It was necessary to adjust the oil content (30 percent of refined oil by weight) to crude basis to bring it back to the mill level. The refined oil content after it was adjusted to crude oil basis varied by years from a low of 31.1 percent to a high of 32.1 percent.

The oil content ratios were then applied to wholesale values of the crude oils used to obtain the value of crude oils in a pint of salad dressing at the oil mill level (table 3). This derived value of oil in a pint of salad dressing was then adjusted to a comparable value at the farm level. This was accomplished by determining the mill and country shipper price spreads and deducting these spreads from the mill value of the oils.

To obtain the mill price spread for soybean and cottonseed oils used in salad dressing, price spread ratios were applied to the values of the oils at the mill (by type). By subtracting the mill spread from the mill value of oils, the value of oils at the country shipping point was obtained.

In the next operation, the shippers' spread ratio was applied to the value of oils at the shipping point level thus determining the shippers' spread. By deducting the shippers' spread from the value of oils at the country shipping point, the value of oils at the farm level was obtained. Mechanics of the procedure can be further studied through the following examples from appendix tables 6, 7, and 8.

In 1966, the mill spread ratio and the shipper spread ratio for soybeans were estimated at 8.2 and 13.1 percent, respectively (appendix table 6). For the same year, the estimated mill value of crude soybean oil used in a pint of salad dressing was 3.0 cents. The mill spread, or 8.2 percent of 3.0 cents, amounted to 0.3 cent, indicating an oil value of 2.7 cents (3.0 cents less 0.3 cent) at the country shipper level. The country shippers' spread, or 13.1 percent of 2.7 cents, was 0.4 cent, leaving an estimated farm value of 2.3 cents (2.7 cents less 0.4 cent) for crude soybean oil used in a pint of salad dressing. The gin and mill spread of 0.4 cent and the farm value of 0.5 cent for cottonseed, corn, and other oils were arrived at in a similar fashion (appendix table 8).

Spreads and farm values for soybean, cottonseed, corn, and other oils were combined. The resulting estimates indicated that the farm value of oil in a pint of salad dressing in 1966 was 2.8 cents, estimated on the basis of cooked salad dressing containing 30 percent refined oil, by weight.

The most important function of the oil mills is crushing, or removing oil from the seeds. Oil mills are also responsible, in part, for the storage of the seeds, meal, and oil so as to produce and maintain the best quality oil and meal possible. Maintaining the flow of seeds into oil and oil into products for consumption throughout the marketing and processing seasons involves a considerable risk of deterioration and price changes.

Products other than oil are produced by crushers from oilseeds. Soybean meal has in recent years had a greater value per bushel of soybeans, than the oil. Cottonseed products include oil, meal, hulls, and linters. Corn oil and corn oilmeal are products of corn germ, a byproduct of the wet and dry millers and distillers industries. In this study, the price spread for each oil was assumed to be the same as the overall spread ratio for all joint products.

Price spread ratios were determined separately for crude soybean and cottonseed oils. These spreads were also applied separately in determining charges for country shipper and oil mill services. However, since price quotations for cottonseed at gins or country points were not considered adequate for this purpose, separate country shipper's (gin) and oil mill spread for cottonseed could not be estimated. Therefore, only a farm to oil mill spread was determined. Appendix tables 6 and 7 present an example of the spread ratios for country shippers and oil mills and the prices and values used to derive these spreads. A similar procedure was followed in determining price spreads for other years not shown in these examples.

Table 5.--Conversion of refined oils used in cooked salad dressing to crude oil basis, by type of oil used

Year	Soybean oil					Cottonseed oil					Corn and other oils					Total adjusted oil content per pint of salad dressing--crude basis
	Proportion of oils 1/	Crude-refined ratio 2/	Oil requirements per pint of salad dressing 3/		Adjusted share 4/	Proportion of oils 1/	Crude-refined ratio 2/	Oil requirements per pint of salad dressing 3/		Adjusted share 4/	Proportion of oils 1/	Crude-refined ratio 2/	Oil requirements per pint of salad dressing 3/		Adjusted share 4/	
			Refined	Crude				Refined	Crude				Refined	Crude		
	Percent															
1963	75.8	103.9	30	31.2	23.6	22.1	106.8	30	32.0	7.1	2.1	108.5	30	32.6	.6	31.3
1964	78.1	103.4	30	31.0	24.2	21.0	105.3	30	31.6	6.6	0.9	106.8	30	32.0	.3	31.1
1965	79.6	103.9	30	31.2	24.8	19.5	108.2	30	32.5	6.4	0.9	107.6	30	32.3	.3	31.5
1966	80.4	104.1	30	31.3	25.2	18.7	106.2	30	31.9	6.0	0.9	108.4	30	32.5	.3	31.5

1/ Proportion of the different oils used in producing salad dressing, mayonnaise and related products.

2/ Crude-refined oil ratio estimated by relating the quantity of crude oil used to the quantity of refined oil produced. Source: Bureau of the Census.

3/ Federal specification as required by the Food & Drug Administration. FDA requires that cooked salad dressing contain a minimum of 30 percent fat by weight.

4/ Refined oil content converted to crude oil basis.

Source: Salad Dressing, Mayonnaise and Related Products, U.S. Department of Commerce, annual bulletin.

Table 6.--Farm and country shipping point prices of soybeans per bushel, mill sales value of equivalent quantity of products, and country shipper and mill margins, 1963-66

Crop year basis	Soybean		Value of products at mill per bu. 3/	Percentage margins	
	Farm price per bu. 1/	Country shippers' price per bu. 2/		Country shippers 4/	Mill 5/
	Dollars			Percent	
1963	2.34	2.50	2.61	6.4	3.4
1964	2.51	2.59	2.64	3.1	1.9
1965	2.62	2.81	2.88	6.8	2.4
1966	2.53	2.91	3.17	13.1	8.2

1/ U.S. average prices received by farmer.

2/ No. 1 yellow--Illinois country shipping points.

3/ Value of crude oil and meal per ton of soybeans processed. Estimates obtained from Fats and Oils Section, Economic and Statistical Analysis Div., ERS

4/ Estimated by dividing the difference between the farm price of soybeans and the country shippers' price by the country shippers' price.

5/ Estimated by dividing the difference between the country shippers price and the value of products at the mill by the value of products at the mill.

Table 7.--Cottonseed prices and combined percentage margin of country shipper and mills, 1963-66

Crop year	Price received by farmer per ton 1/	Value of product at mill per ton 2/	Percentage margin, gin and mill 3/
	Dollars	Dollars	Percent
1963	47.90	75.75	36.8
1964	50.70	73.04	30.6
1965	47.10	77.24	39.0
1966	46.70	86.10	45.8

1/ U.S. average prices.

2/ Value of crude oil, meal, linters, and hulls per ton of cottonseed processed. Estimates obtained from Fats and Oils Section, Economic and Statistical Analysis Div., ERS.

3/ Estimated by dividing the difference between the farm price per ton of cottonseed and the value of products at the mill by the value of products at the mill.

Table 8.--Value of soybeans, cottonseed, corn, and other oil equivalents per pint of salad dressing at farm, country shipper, and oil mills, and price spreads, 1963-66

Crop year	Values								
	Farm			Country shipper			Mill 1/		
	Soybean oil	Cottonseed, corn, and other oils	Total	Soybean oil	Cottonseed, corn, and other oils	Total	Soybean oil	Cottonseed, corn, and other oils	Total
	-Cents-								
1963	1.9	.5	2.4	2.0	2/	2.0	2.1	.8	2.9
1964	1.9	.5	2.4	2.0	2/	2.0	2.1	.7	2.8
1965	2.6	.4	3.0	2.7	2/	2.7	2.8	.7	3.5
1966	2.3	.5	2.8	2.7	2/	2.7	3.0	.9	3.9

Crop year	Price spreads								
	Country shipper			Mill			Farm-to-mill		
	Soybean oil 3/	Cottonseed, corn, and other oils 4/	Total	Soybean oil 3/	Cottonseed, corn, and other oils 4/	Total	Soybean oil 3/	Cottonseed, corn, and other oils 4/	Total
	-Cents-								
1963	.13	2/	.13	.1	.3	.4	.3	.3	.6
1964	.06	2/	.06	.1	.2	.3	.2	.2	.4
1965	.10	2/	.10	.1	.3	.4	.2	.3	.5
1966	.4	2/	.4	.3	.4	.7	.7	.4	1.1

1/ See columns 3, 6, 9, and 11 in table 3.
2/ Included in mill margins.
3/ Estimates based on columns 4 and 5 of table 6.
4/ Estimates based on column 3 table 7.

Table 9.--Salad dressing, mayonnaise, and related products: Production and value by sales volume of establishment, 1946-66

Year	Total			$2,000,000 and over			$1,000,000 - $1,999,999			$500,000 - $999,999			Less than $500,000		
	Firms reporting	Production		Firms reporting	Production		Firms reporting	Production		Firms reporting	Production		Firms reporting	Production	
		Quantity	Value		Quantity	Value		Quantity	Value		Quantity	Value		Quantity	Value
	Number	Thousand gallons	Thousand dollars	Number	Thousand gallons	Thousand dollars	Number	Thousand gallons	Thousand dollars	Number	Thousand gallons	Thousand dollars	Number	Thousand gallons	Thousand dollars
1946	136	57,274	110,231	11	38,683	78,600	11	6,388	10,421	13	3,596	6,478	101	8,607	14,732
1947	136	76,769	185,674	11	57,675	146,452	11	7,582	15,755	13	4,173	9,376	101	7,339	14,091
1948	144	83,140	214,466	9	63,499	172,709	11	8,633	18,205	10	4,079	9,393	114	6,929	14,161
1949	105	81,612	178,989	10	67,494	153,483	9	6,208	10,900	12	3,698	7,243	74	4,212	7,362
1950	89	86,230	190,850	12	73,018	167,064	9	5,847	10,394	9	2,821	4,887	59	4,545	8,505
1951	86	87,728	213,747	12	73,565	186,383	7	5,189	9,915	12	4,551	9,149	55	4,423	8,300
1952	67	89,659	194,419	12	78,071	174,067	7	4,960	8,330	9	3,927	6,874	39	2,701	5,148
1953	64	92,507	207,654	12	81,519	186,640	8	5,550	10,306	8	2,375	5,118	36	3,063	6,590
1954	69	94,222	216,802	12	82,232	192,733	8	5,378	10,031	11	3,262	7,681	38	3,350	6,357
1955	95	104,352	230,285	15	89,022	201,216	10	6,450	12,211	14	4,426	9,027	56	4,454	7,831
1956	129	114,858	211,415	16	92,492	169,706	14	9,791	18,495	19	6,013	11,741	80	6,562	11,473
1957	137	121,360	227,746	18	96,156	182,570	14	10,889	19,347	20	7,521	13,754	85	7,723	12,075
1958	136	125,527	237,321	19	99,570	189,496	13	9,751	19,403	19	8,162	14,327	85	8,044	14,095
1959	140	133,996	243,049	18	104,573	189,493	15	11,946	23,701	16	7,513	12,230	91	9,964	17,625
1960	135	136,504	242,743	18	108,685	193,080	15	11,465	22,685	22	7,724	12,012	80	8,630	14,966
1961	135	147,253	269,426	20	118,251	219,045	14	11,212	21,487	20	10,109	15,981	81	7,681	12,913
1962	135	144,595	259,680	19	113,637	205,797	15	13,526	25,255	21	9,541	15,398	80	7,891	13,230
1963	193	160,327	279,848	19	122,081	216,107	16	12,931	22,490	34	14,883	24,253	124	10,432	16,998
1964	186	167,181	289,598	20	131,425	229,325	20	13,946	25,143	31	12,058	18,973	115	9,752	16,157
1965	179	174,754	313,834	20	137,493	249,942	20	15,626	28,132	31	12,903	20,929	108	10,205	17,167
1966	175	182,367	335,042	22	145,032	267,595	22	28,132	31,608	31	12,186	21,770	100	7,781	14,069

Source: Salad Dressing, Mayonnaise, and Related Products, U.S. Department of Commerce, annual bulletin.

Table 10.--Salad dressing: Quarterly retail prices per pint, by major and minor brands, size groups, and selected cities, and minor brand price differentials, 1963-66

Year, quarter, and city	Major brands				Minor brands							
					City average		Large		Medium		Small	
	City average	Large 1/	Medium 2/	Small 3/	Price	Differential from major brands	Price	Differential from major brands	Price	Differential from major brands	Price	Differential from major brands
1966	-Cents-											
1st quarter:												
Atlanta	44.0	43.1	45.3	45.0	31.3	-12.7	31.5	-11.6	30.7	-14.6	31.0	-14.0
Chicago	41.6	41.0	42.3	42.4	31.6	-10.0	31.5	-9.5	30.4	-11.9	33.0	-9.4
Houston	43.3	43.5	43.0	43.4	36.2	-7.1	35.2	-8.3	36.5	-6.5	37.8	-5.6
Los Angeles	38.6	37.1	39.4	44.5	4/	--	27.5	-9.6	4/	--	4/	--
Philadelphia	39.9	39.0	40.5	42.2	32.1	-7.8	31.6	-7.4	32.6	-7.9	33.5	-8.7
Seattle	43.9	42.7	45.0	44.6	35.0	-8.9	34.8	-7.9	35.5	-9.5	35.0	-9.6
2nd quarter:												
Atlanta	43.1	42.4	45.5	43.3	33.7	-9.4	34.7	-7.7	32.2	-13.3	32.5	-10.8
Chicago	40.8	39.0	42.3	44.2	31.4	-9.4	31.7	-7.3	29.9	-12.4	32.0	-12.2
Houston	43.3	43.6	42.9	43.5	36.8	-6.5	36.3	-7.3	36.5	-6.4	38.5	-5.0
Los Angeles	38.1	36.3	39.5	43.8	4/	--	27.9	-8.4	29.0	-10.5	4/	--
Philadelphia	40.3	39.1	40.9	43.1	32.6	-7.7	32.4	-6.7	32.0	-8.9	33.3	-9.8
Seattle	44.7	44.5	44.8	45.0	35.0	-9.7	34.8	-9.7	35.2	-9.6	35.0	-10.0
3rd quarter:												
Atlanta	44.6	45.1	45.9	42.7	34.1	-10.5	36.0	-9.1	33.0	-12.9	31.0	-11.7
Chicago	41.5	40.4	42.0	43.6	32.0	-9.5	32.5	-7.9	29.8	-12.2	33.0	-10.6
Houston	43.4	43.5	42.9	44.0	36.0	-7.4	34.3	-9.2	36.6	-6.3	38.5	-5.5
Los Angeles	38.1	36.5	39.3	43.8	4/	--	28.5	-8.0	4/	--	4/	--
Philadelphia	39.9	39.1	40.6	41.8	33.2	-6.7	33.0	-6.1	32.6	-8.0	33.7	-8.1
Seattle	44.0	42.7	45.1	45.0	35.1	-8.9	34.8	-7.9	35.3	-9.8	35.8	-9.2
4th quarter:												
Atlanta	45.7	45.8	47.3	44.4	35.5	-10.2	37.9	-7.9	34.7	-12.6	31.0	-13.4
Chicago	39.9	37.0	43.4	43.7	30.6	-9.3	29.6	-7.4	30.5	-12.9	33.3	-10.4
Houston	44.9	46.3	43.6	44.3	36.3	-8.6	35.2	-11.1	35.7	-7.9	40.0	-4.3
Los Angeles	39.0	37.4	40.3	44.2	4/	--	4/	--	4/	--	4/	--
Philadelphia	41.9	41.1	43.0	43.9	33.1	-8.8	33.0	-8.1	33.0	-10.0	33.3	-10.6
Seattle	45.0	44.3	45.6	45.6	35.2	-9.8	35.0	-9.3	35.7	-9.9	35.0	-10.6

See footnotes at end of table.

Continued--

Table 10.--Salad dressing: Quarterly retail prices per pint, by major and minor brands, size groups, and selected cities, and minor brand price differentials, 1963-66--Continued

Year, quarter, and city	Major brands				Minor brands							
					City average		Large		Medium		Small	
	City average	Large 1/	Medium 2/	Small 3/	Price	Differential from major brands	Price	Differential from major brands	Price	Differential from major brands	Price	Differential from major brands
							Cents					
1965												
1st quarter:												
Atlanta	40.6	40.2	41.3	38.8	32.6	-7.6	34.3	-6.3	31.3	-10.0	30.0	-8.8
Chicago	38.8	39.4	40.1	40.5	30.0	-9.4	29.4	-9.4	30.7	-9.4	30.7	-9.8
Houston	39.3	39.8	4/	40.3	33.5	-6.3	32.2	-7.1	4/	4/	34.5	-5.8
Los Angeles	36.6	37.5	37.5	42.0	4/	4/	31.0	-5.6	29.5	-8.0	4/	4/
Philadelphia	36.6	37.5	38.6	39.6	31.1	-6.4	30.4	-6.2	32.3	-6.3	32.7	-6.9
Seattle	42.4	42.7	43.0	43.0	35.2	-7.5	35.0	-7.4	35.5	-7.5	35.4	-7.6
2nd quarter:												
Atlanta	43.9	43.2	43.3	41.6	32.1	-11.1	31.2	-12.7	31.0	-12.3	34.5	-7.1
Chicago	38.7	40.1	41.8	41.9	32.2	-7.9	33.2	-5.5	30.4	-11.4	31.3	-10.6
Houston	43.6	43.2	42.6	43.1	36.3	-6.9	38.1	-5.5	34.0	-8.6	36.5	-6.6
Los Angeles	38.1	38.8	38.9	41.6	4/	4/	28.9	-9.2	4/	4/	4/	4/
Philadelphia	39.2	39.7	39.8	41.1	32.2	-7.5	31.4	-7.8	32.7	-7.1	34.0	-7.1
Seattle	43.6	43.6	43.8	43.4	35.3	-8.3	35.1	-8.5	35.3	-8.5	35.8	-7.6
3rd quarter:												
Atlanta	43.7	42.7	43.3	40.4	29.7	-13.0	32.2	-11.5	30.8	-12.5	24.0	-16.4
Chicago	44.6	43.7	42.0	42.9	31.3	-12.4	31.7	-12.9	30.6	-11.4	31.0	-11.9
Houston	42.1	42.7	43.0	43.4	35.2	-7.5	35.1	-7.0	34.4	-8.6	36.6	-6.8
Los Angeles	39.0	39.8	39.7	43.6	4/	4/	28.3	-10.7	4/	4/	4/	4/
Philadelphia	39.2	40.0	40.0	42.1	32.1	-7.9	32.3	-7.9	34.0	-7.7	34.0	-8.1
Seattle	45.0	44.9	44.8	45.0	35.2	-9.7	35.0	-10.0	35.4	-9.4	35.0	-10.0
4th quarter:												
Atlanta	43.4	43.5	45.0	43.0	30.4	-13.1	30.9	-12.5	29.7	-15.3	30.0	-13.0
Chicago	41.0	41.5	41.8	42.6	33.4	-8.1	34.5	-6.5	30.7	-11.1	33.0	-9.6
Houston	43.6	43.3	42.9	43.4	36.2	-7.1	34.7	-8.9	37.0	-5.9	37.8	-5.6
Los Angeles	39.1	39.5	39.5	41.4	4/	4/	27.5	-11.6	4/	4/	4/	4/
Philadelphia	39.2	39.8	40.4	41.2	31.9	-7.9	31.3	-7.9	31.6	-8.8	33.8	-7.4
Seattle	45.5	45.3	45.1	45.0	35.2	-10.1	35.3	-10.2	35.2	-9.9	35.0	-10.0

See footnotes at end of table.

Continued--

Table 10.--Salad dressing: Quarterly retail prices per pint, by major and minor brands, size groups, and selected cities, and minor brand price differentials, 1963-66--Continued

Year, quarter, and city	Major brands				Minor brands							
					City average		Large		Medium		Small	
	City average	Large 1/	Medium 2/	Small 3/	Price	Differential from major brands	Price	Differential from major brands	Price	Differential from major brands	Price	Differential from major brands
					-Cents-							
1964												
1st quarter:												
Atlanta	38.6	37.3	40.6	--	29.1	-9.5	29.2	-8.1	29.0	-11.6	--	--
Chicago	39.4	39.0	39.9	--	29.2	-10.2	28.5	-10.5	30.0	-9.9	--	--
Houston	39.2	39.3	39.0	--	34.2	-5.0	32.4	-6.9	35.6	-3.4	--	--
Los Angeles	37.2	35.5	39.6	--	4/	4/	27,8	-7.7	4/	4/	--	--
Philadelphia	38.0	37.0	39.1	--	31.0	-7.0	30.3	-6.7	31.8	-7.3	--	--
Seattle	43.0	43.0	43.1	--	35.7	-7.3	35.0	-8.0	36.2	-6.9	--	--
2nd quarter:												
Atlanta	39.9	39.7	40.2	--	28.6	-11.3	28.4	-11.3	29.0	-11.2	--	--
Chicago	39.4	39.0	39.9	--	28.6	-10.8	28.3	-10.7	28.9	-11.0	--	--
Houston	39.5	39.3	39.7	--	33.4	-6.1	31.6	-7.7	34.9	-4.8	--	--
Los Angeles	36.8	35.2	39.1	--	4/	4/	27.8	-7.4	4/	4/	--	--
Philadelphia	38.0	37.0	39.2	--	31.1	-6.9	30.3	-6.7	32.0	-7.2	--	--
Seattle	43.0	43.0	43.1	--	35.7	-7.3	35.0	-8.0	36.2	-6.9	--	--
3rd quarter:												
Atlanta	39.4	39.7	40.1	38.3	4/	4/	32.1	-7.6	29.0	-11.1	4/	4/
Chicago	39.0	38.8	38.5	40.0	32.3	-6.7	34.1	-4.7	29.3	-9.2	30.7	-9.3
Houston	39.7	39.3	4/	39.9	33.8	-5.9	31.6	-7.7	--	4/	35.6	-4.3
Los Angeles	36.1	35.6	36.1	39.0	4/	4/	27.7	-7.9	29.0	-7.1	4/	4/
Philadelphia	37.8	37.3	37.4	39.2	29.0	-8.8	27.2	-10.1	32.3	-5.1	32.7	-6.5
Seattle	42.8	42.4	43.1	43.0	34.9	-7.9	35.4	-7.0	35.1	-8.0	34.9	-8.1
4th quarter:												
Atlanta	37.8	37.4	40.5	37.0	4/	4/	29.1	-8.3	29.0	-11.5	4/	4/
Chicago	39.1	38.8	38.3	39.4	29.7	-9.4	29.3	-9.5	28.9	-10.4	31.6	-7.8
Houston	39.8	39.4	4/	40.2	33.5	-6.3	32.2	-7.2	4/	--	34.7	-5.5
Los Angeles	36.4	35.7	36.5	40.0	4/	4/	30.1	-5.6	33.4	-3.1	4/	4/
Philadelphia	37.7	37.0	38.0	39.3	28.3	-9.4	27.2	-9.8	32.3	-5.7	30.0	-9.3
Seattle	43.0	43.0	42.9	43.0	35.5	-7.5	35.6	-7.4	35.4	-7.5	35.4	-7.6

See footnotes at end of table.

Continued--

Table 10.--Salad dressing: Quarterly retail prices per pint, by major and minor brands, size groups, and selected cities, and minor brand price differentials, 1963-66--Continued

Year, quarter, and city	Major brands				Minor brands							
					City average		Large		Medium		Small	
	City average	Large 1/	Medium 2/	Small 3/	Price	Differential from major brands	Price	Differential from major brands	Price	Differential from major brands	Price	Differential from major brands
					Cents							
1963												
1st quarter:												
Atlanta	38.8	38.0	39.9	--	30.2	-8.6	28.6	-9.4	32.8	-7.1	--	--
Chicago	39.4	38.8	40.2	--	29.5	-9.9	29.5	-9.3	29.4	-10.8	--	--
Houston	--	--	--	--	--	--	--	--	--	--	--	--
Los Angeles	37.0	35.0	39.7	--	29.5	-7.5	27.4	-7.6	32.5	-7.2	--	--
Philadelphia	38.1	37.0	39.4	--	34.0	-4.1	34.3	-2.7	33.6	-5.8	--	--
Seattle	39.4	39.0	39.7	--	35.1	-4.3	33.4	-5.6	36.3	-3.4	--	--
2nd quarter:												
Atlanta	35.8	35.0	37.0	--	30.3	-5.5	28.8	-6.2	32.8	-4.2	--	--
Chicago	39.2	38.6	39.8	--	29.2	10.0	29.1	-9.5	29.3	-10.5	--	--
Houston	38.2	37.6	38.7	--	33.5	-4.7	31.4	-6.2	35.3	-3.4	--	--
Los Angeles	37.0	35.1	39.7	--	29.5	-7.5	27.4	-7.7	32.5	-7.2	--	--
Philadelphia	37.7	37.0	38.5	--	31.5	-6.2	30.6	-6.4	32.7	-5.8	--	--
Seattle	4/	4/	4/	--	4/	4/	4/	4/	35.0	4/	--	--
3rd quarter:												
Atlanta	37.3	36.1	39.3	--	28.9	-8.4	28.4	-7.7	29.6	-9.7	--	--
Chicago	39.1	39.0	39.3	--	28.3	-10.3	26.8	-12.2	29.9	-9.4	--	--
Houston	38.5	37.7	39.3	--	32.9	-5.6	29.0	-8.7	36.2	-3.1	--	--
Los Angeles	37.2	35.5	39.6	--	29.6	-7.6	37.7	-7.8	32.3	-7.3	--	--
Philadelphia	38.7	38.4	39.1	--	33.2	-5.5	33.1	-5.3	33.3	-5.8	--	--
Seattle	39.8	39.2	40.1	--	35.0	-4.8	33.4	-5.8	36.2	-3.9	--	--
4th quarter:												
Atlanta	40.2	40.0	40.4	--	28.6	-11.6	28.4	-11.6	29.0	-11.4	--	--
Chicago	39.6	39.0	40.2	--	28.4	-11.2	27.8	-11.2	29.1	-11.1	--	--
Houston	39.4	39.3	39.4	--	34.0	-5.4	32.2	-7.1	35.5	-3.9	--	--
Los Angeles	38.1	36.7	40.0	--	4/	--	27.9	-8.8	4/	4/	--	--
Philadelphia	38.0	37.0	39.2	--	31.8	-6.2	31.8	-5.2	31.9	-7.3	--	--
Seattle	42.8	43.0	42.7	--	36.2	-6.6	35.9	-7.1	36.5	-6.2	--	--

1/ Chainstores and large independent supermarkets through the 2nd quarter of 1964. Beginning with the 3rd quarter of 1964 "large" represents chainstores only.

2/ Independent grocery stores excluding large supermarkets through the 2nd quarter of 1964. Beginning with the 3rd quarter of 1964 "medium" represents large independent grocers only.

3/ Included with medium-sized grocers through the 2nd quarter of 1964. Beginning with the 3rd quarter of 1964 "small" represents small grocery stores.

4/ Insufficient number of quotations.

Source: Bureau of Labor Statistics.

Table 11.--Salad dressing: Mill value of crude vegetable oil per pint of salad dressing manufactured; quarterly retail selling price per pint, by size, city average and major and minor brands; and mill-retail price spread, for selected cities, 1966

Quarter and city	Cost of oil, crude basis 1/	Major brands: Retail selling price: City average	Large 2/	Medium 3/	Small 4/	City: Mill-retail price spread	City: Spread as percentage of retail selling price	Large: Mill-retail price spread	Large: Spread as percentage of retail selling price	Medium: Mill-retail price spread	Medium: Spread as percentage of retail selling price	Small: Mill-retail price spread	Small: Spread as percentage of retail selling price
	Cents	Cents	Cents	Cents	Cents	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent
1st quarter:													
Atlanta	3.9	44.0	43.1	45.3	45.0	40.1	91.1	39.2	91.0	41.4	91.4	41.1	91.3
Chicago	3.9	41.6	41.0	42.3	42.4	37.7	90.6	37.1	90.5	38.4	90.8	38.5	90.8
Houston	3.9	43.3	4.35	43.0	43.4	39.4	91.0	39.6	91.0	39.1	90.9	39.5	91.0
Los Angeles	3.9	38.6	37.1	39.4	44.5	34.7	89.9	33.2	89.5	35.5	90.1	40.6	91.2
Philadelphia	3.9	39.9	39.0	40.5	42.2	36.0	90.2	35.1	90.0	36.6	90.4	38.3	90.8
Seattle	3.9	43.9	42.7	45.0	44.6	40.0	91.1	38.8	90.9	41.1	91.3	40.7	91.3
2nd quarter:													
Atlanta	3.9	43.1	42.4	45.5	43.3	39.2	91.0	38.5	90.8	41.6	91.4	39.4	91.0
Chicago	3.9	40.8	39.0	42.3	44.2	36.9	90.4	35.1	90.0	38.4	90.8	40.3	91.2
Houston	3.9	43.3	43.6	42.9	43.5	39.4	91.0	39.7	91.1	39.0	90.9	39.6	91.0
Los Angeles	3.9	38.1	36.3	39.5	43.8	34.2	89.8	32.4	89.3	35.6	90.1	39.9	91.1
Philadelphia	3.9	40.3	39.1	40.9	43.1	36.4	90.3	35.2	90.0	37.0	90.5	39.2	91.0
Seattle	3.9	44.7	44.5	44.8	45.0	40.8	91.3	40.6	91.2	40.9	91.3	41.1	91.3
3nd quarter:													
Atlanta	3.9	44.6	45.1	45.9	42.7	40.7	91.3	41.2	91.4	42.0	91.5	38.8	90.9
Chicago	3.9	41.5	40.4	42.0	43.6	37.6	90.6	36.5	90.3	38.1	90.7	39.7	91.1
Houston	3.9	43.4	43.5	42.9	44.0	39.5	91.0	39.6	91.0	39.0	90.9	40.1	91.1
Los Angeles	3.9	38.1	36.5	39.3	43.8	34.2	89.8	32.6	89.3	35.4	90.1	39.9	91.1
Philadelphia	3.9	39.9	39.1	40.6	41.8	36.0	90.2	35.2	90.0	36.7	90.4	37.9	90.7
Seattle	3.9	44.0	42.7	45.1	45.0	40.1	91.1	38.8	90.9	41.2	91.4	41.1	91.3
4th quarter:													
Atlanta	3.9	45.7	45.8	47.3	44.4	41.8	91.5	41.9	91.5	43.4	91.8	40.5	91.2
Chicago	3.9	39.9	37.0	43.4	43.7	36.0	90.2	33.1	89.5	39.5	91.0	39.8	91.1
Houston	3.9	44.9	46.3	43.6	44.3	41.0	91.3	42.4	91.6	39.7	91.1	40.4	91.2
Los Angeles	3.9	39.0	37.4	40.3	44.2	35.1	90.0	33.5	89.6	36.4	90.3	40.3	91.2
Philadelphia	3.9	41.9	41.1	43.0	43.9	38.0	90.7	37.2	90.5	39.1	90.9	40.0	91.1
Seattle	3.9	45.0	44.3	45.6	45.6	41.1	91.3	40.4	91.2	41.7	91.4	41.7	91.4

See footnotes at end of table.

Continued--

Table 11.--Salad dressing: Mill value of crude vegetable oil per pint of salad dressing manufactured; quarterly retail selling price per pint, by size, city average and major and minor brands; and mill-retail price spread, for selected cities, 1966--Cont.

Quarter and city	Cost of oil, crude basis 1/	Minor brands: Retail selling price: City average	Large 2/	Medium 3/	Small 4/	Minor brands: City: Mill-retail price spread	City: Spread as percentage of retail selling price	Minor brands: Large: Mill-retail price spread	Large: Spread as percentage of retail selling price	Minor brands: Medium: Mill-retail price spread	Medium: Spread as percentage of retail selling price	Minor brands: Small: Mill-retail price spread	Small: Spread as percentage of retail selling price
	Cents	Cents	Cents	Cents	Cents	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent
1st quarter:													
Atlanta	3.9	31.3	31.5	30.7	31.0	27.4	87.5	27.6	87.6	26.8	87.3	27.1	87.4
Chicago	3.9	31.6	31.5	30.4	33.0	27.7	87.7	27.6	87.6	26.5	87.2	29.1	88.2
Houston	3.9	36.2	35.2	36.5	37.8	32.3	89.2	31.3	88.9	32.6	89.3	33.9	89.7
Los Angeles	3.9	27.5	5/	5/	5/	5/	5/	23.6	85.8	5/	5/	5/	5/
Philadelphia	3.9	32.1	31.6	32.6	33.5	28.2	87.9	27.7	87.7	28.7	88.0	29.6	88.4
Seattle	3.9	35.0	34.8	35.5	35.0	31.1	88.9	30.9	88.8	31.6	89.0	31.1	88.9
2nd quarter:													
Atlanta	3.9	33.7	34.7	35.2	32.5	29.8	88.4	30.8	88.8	28.3	87.9	28.6	88.0
Chicago	3.9	31.4	31.7	29.9	32.0	27.5	87.6	27.8	87.7	26.0	87.0	28.1	87.8
Houston	3.9	36.8	36.3	36.5	38.5	32.9	89.4	32.4	89.3	32.6	89.3	34.6	89.9
Los Angeles	3.9	5/	27.9	29.0	5/	5/	5/	24.0	86.0	25.1	86.6	5/	5/
Philadelphia	3.9	32.6	32.4	32.0	33.3	28.7	88.0	28.5	88.0	28.1	87.8	29.4	88.3
Seattle	3.9	35.0	34.8	35.2	35.0	31.1	88.9	30.9	88.8	31.3	88.9	31.1	88.9
3rd quarter:													
Atlanta	3.9	34.1	36.0	33.0	31.0	30.2	88.6	32.1	89.2	29.1	88.2	27.1	87.4
Chicago	3.9	32.0	32.5	29.8	33.0	28.1	87.8	28.6	88.0	25.9	86.9	29.1	88.2
Houston	3.9	36.0	34.3	36.6	38.5	32.1	89.2	30.4	88.6	32.7	89.3	34.6	89.9
Los Angeles	3.9	5/	28.5	5/	5/	5/	5/	24.6	86.3	5/	5/	5/	5/
Philadelphia	3.9	33.2	33.0	32.6	33.7	29.3	88.3	29.1	88.2	28.7	88.0	29.8	88.4
Seattle	3.9	35.1	34.8	35.3	35.8	31.2	88.9	30.9	88.8	31.4	89.0	31.9	89.1
4th quarter:													
Atlanta	3.9	35.5	37.9	34.7	31.0	31.6	89.0	34.0	89.7	30.8	88.8	27.1	87.4
Chicago	3.9	30.6	29.6	30.5	33.3	26.7	87.3	25.7	86.8	26.6	87.2	29.4	88.3
Houston	3.9	36.3	35.2	35.7	40.0	32.4	89.3	31.3	88.9	31.8	89.1	36.1	90.2
Los Angeles	3.9	5/	5/	5/	5/	5/		5/		5/		5/	
Philadelphia	3.9	33.1	33.0	33.0	33.3	29.2	88.2	29.1	88.2	29.1	88.2	29.4	88.3
Seattle	3.9	35.2	35.0	35.7	35.0	31.3	88.9	31.1	88.9	31.8	89.1	31.1	88.9

1/ Mill value of soybean, cottonseed, and other oil equivalents per pint of salad dressing manufactured, column 11, Table 3.

2/ Chainstores and large independent supermarkets through the 2nd quarter of 1964. Beginning with the 3rd quarter of the 1964 "large" represents chainstores only.

3/ Independent grocery stores excluding large supermarkets through the 2nd quarter of 1964. Beginning with the 3rd quarter of 1964 "medium" represents large independent grocers only.

4/ Included with medium sized grocers through the 2nd quarter of 1964. Beginning with the 3rd quarter of 1964 "small" represents small grocery stores.

5/ Insufficient number of quotations.

Source: Bureau of Labor Statistics.